

---

**Remarks**

The various parts of the Office Action (and other matters, if any) are discussed below under appropriate headings.

***Claim Rejections - 35 USC § 112***

Claim 5 was rejected under 35 U.S.C. §112, second paragraph, for lack of antecedent basis. The claim has been corrected. Therefore, the rejection should be withdrawn.

***Claim Rejections - 35 USC § 103***

Claim 1 recites a semiconductor device, which includes a source and a drain consisting essentially of silicide, a channel interposed between the source and drain and a gate dielectric made from a material having a relative permittivity of greater than about 10.

It is respectfully submitted that Snyder fails to disclose or fairly suggest a channel interposed between the source and drain. Rather, Snyder discloses a channel region below the source and drain.

Paragraph 7 of the Office Action states that, "it is understood that the gate electrode (906 or 907) defines a channel between the source and the drain (904 or 905)." Snyder seems to indicate otherwise. Figs. 4-8 and the associated text disclose an implanted channel dopant layer (403) below a semiconductor layer (402). Such a channel layer is not interposed between the source and drain. Rather, it is located below the source and drain. This teaching is carried forward in Fig. 9 where Indium/Arsenic channel doping regions (902/903) are identified below the source and drain (904/905), rather than interposed between the source and drain. None of the cited references cure the deficiencies of Snyder. Therefore, for at least this reason, it is respectfully submitted that the rejection should be withdrawn.

In addition, paragraph 7 of the Office Action acknowledges that Snyder fails to disclose or fairly suggest a gate dielectric with a relative permittivity of greater than 10. While the Office Action relies on Ma and Liu to supplement the teaching of Snyder, it is respectfully submitted that a prima facie case of obviousness has not been established.

In establishing a prima facie case of obviousness, the teaching or suggestion to make the claimed combination and the reasonable expectation of success must both

be found in the prior art, and not based on applicant's disclosure. MPEP 2142 citing *In re Vaeck*, 20 USPQ2d 1438 (Fed. Cir. 1991). See also, *In re Dembiczak*, 50 USPQ2d 1614, 1617 (Fed. Cir. 1999).

In the present case, it is unclear why a skilled artisan would look to Snyder, Ma and Liu in combination and, importantly, where in these references a reasonable expectation of the success of such a combination exists. Further, it is unclear why a skilled artisan would look at all to Liu, which is concerned with extension of shallow trench isolation by ion implantation, to supplement the teaching of Snyder. Without such a showing of a reasonable expectation of success, a prima facie case of obviousness cannot be established.

For at least these reasons, it is respectfully submitted that claim 1 and claims 2-10 dependent therefrom distinguish patentably over the references of record. Accordingly, the rejection should be withdrawn.

For at least the reasons articulated above with respect to claim 1, it is respectfully submitted that claims 20 and 21 distinguish patentably over the references of record.

### **Conclusion**

In view of the foregoing, request is made for timely issuance of a notice of allowance.

Respectfully submitted,

RENNER, OTTO, BOISSELLE & SKLAR, LLP

By Jason A. Worgull  
Jason A. Worgull, Reg. No. 48,044

1621 Euclid Avenue  
Nineteenth Floor  
Cleveland, Ohio 44115  
(216) 621-1113

R:\JWorgull\AMDS\PG0815us\AMDS\PG0615US.R05.wpd